

PARKER RIVER

NARRATIVE REPORT

January-December 1966

PARKER RIVER NATIONAL WILDLIFE REFUGE

Newburyport, Massachusetts

NARRATIVE REPORT

Jan. - Dec. 1966

REFUGE PERSONNEL

Harold J. O'Connor*	Refuge Manager
William L. French**	Refuge Manager
William R. Forward	Asst. Refuge Manager
Thomas J. Stubbs	Foreman III
Raoul J. De Serres	Maintenanceman
Donald G. Grover	Maintenanceman
Harry E. Sears	Maintenanceman
Irvine H. Walker, Jr.	Maintenanceman
Catherine A. Welch	Clerk

*Entered on Duty July 15, 1966

**Entered on Duty June 22, 1964. Transferred to R. O. 6/19/66.

TEMPORARY PERSONNEL

		<u>Entered on</u> <u>Duty</u>	<u>Terminated</u>
Edward R. Cormier	Laborer	5/17/66	12/31/66
Norman R. Crocker	Laborer	4/18/66	7/6/66
Norman R. Crocker	Laborer	11/16/66	
Roger N. Steelman, Jr.	Laborer	7/5/66	
Kenneth G. Blood, Jr.	Laborer	5/18/66	7/5/66
Allison L. Cammett	Laborer	5/17/66	9/5/66
Reginald T. Butt	Laborer	6/6/66	11/28/66
Peter H. Johnson	Lifeguard	6/15/66	9/5/66
Zachary M. Longley	Lifeguard	6/24/66	9/10/66
Jeffrey B. Regan	Lifeguard	7/14/66	9/16/66
Jeffrey B. Regan	Laborer	10/22/66	
Curtis R. Walton	Lifeguard	6/15/66	9/16/66
Curtis R. Walton	Laborer	10/29/66	
William A. Cade	Student Asst.	6/6/66	8/19/66
Lawrence Novak	Student Asst.	8/4/66	9/9/66

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Jan. - Dec. 1966

I. General

A. Weather Conditions.

The year 1966 was notable in that the long term drought of recent years in the northeast was continued, with only local and temporary relief observed in the pattern. Winter in January, February and early March was moderately severe, in terms of snowfall and temperatures, for only short periods of time. Ice breakup in fresh water pools came early in the first week of March. The spring and summer months, April through August, were typical, with temperatures in August reaching to the mid-90's. These periods were coupled with spells of cool and foggy weather and precipitation was limited and erratic in occurrence. This pattern continued into the fall months and is reflected in comparisons with monthly long term averages (see chart which follows). Freeze up was late coming and occurred by December 20. At the close of the year total precipitation was 9.18" shy of the average yearly total.

The following data was gathered from the weather station located at headquarters and the nearby Merrimack River Life Boat Station of the U. S. Coast Guard.

Precipitation

	<u>Snowfall</u>	<u>This Month</u>	<u>Average</u>	<u>Maximum</u>	<u>Minimum</u>
				<u>Temperature</u>	
Jan.	27"	2.70	3.81	57	0
Feb.	10"	4.21	3.30	52	-4
Mar.		3.12	3.25	57	16
Apr.		1.67	3.64	66	20
May		2.76	3.98	80	32
June		2.42	2.41	89	47
July		2.93	3.62	94	50
Aug.		1.45	3.03	89	54
Sept.		2.06	3.25	84	40
Oct.		3.38	3.71	76	27
Nov.		4.17	4.71	67	20
Dec.	5.3"	2.30	3.64	59	9
Totals	42.3	33.17	42.35		
Extremes				94	-4

Averages 1947 through 1965.

B. Habitat Conditions.

1. Water: Pool units were frozen until March 5th when spring breakup occurred. Water levels followed normal sequence this year, peaking right at spring breakup and gradually declining after this time. The drought effects, added to evaporation and transpiration losses throughout the growing season combined again to reflect the water shortage again this year, as it did the past two or three years. In spite of the limitations, however, management objectives were reasonably well satisfied.

The North and South Pool fields were planted with rye as in past years following natural drawdown of the units. Japanese millet was also planted in the South Pool marsh area again this year although no flooding of the plantings by pumping was done.

The Stage Island Pool remained flooded this past year. The higher water levels maintained therein exerted needed biological control of such undesirable perennials as phragmites and purple loosestrife.

Water levels remained at favorable stages over the year in this unit.

2. Food and Cover: As is normal, the North Pool had a natural drawdown following the early spring high water peak. Volunteer growths of smartweed, millet, panicum grass and bulrush came in as the season went on. Some areas of heavy cattail growth were opened up by mowing to encourage development of preferred annuals. The drought exerted an effect and kept the pool area in a dry marsh state most of the summer and fall. The 24-acre field in the pool edge was reseeded to winter rye in August for goose browse. This planting made good growth and was well utilized by migrant Canada geese from late October to mid-December. Cover in the North Pool was abundant and adequate.

The South Pool marsh water levels dwindled naturally in a manner similar to the North Pool. When it had dried out sufficiently in May the marsh bottom was disced up and seeded to Japanese millet. This planting did only fair, possibly due to the limited moisture and/or competition from weed species. For this and other reasons the pool was not flooded by pumping in early fall of this past year. Following some fall rainfall, good numbers of birds utilized portions of this pool and planting until after freeze up.

The 8-acre upland field at the south end of the South Pool was also seeded to winter rye in normal manner and received excellent and complete use by migrant Canada geese of the fall flight. Cover was adequate in the unit.

Stage Island Pool remained flooded throughout the year. Despite drought effects, levels stayed up very well and some good natural control was exerted on isolated problem growths of phragmites and purple loosestrife, as well as cattail. Smartweed, wild millet and three square bulrush developed nicely in some areas of the pool. Throughout the summer and fall this was our best area of habitat and waterfowl use including brood use was good. Cover was excellent in the unit.

In addition to the previously mentioned natural and planted habitat, winter rye plantings were made in the Stage Island field (20 acres), Cross Farm field (27 acres), and at Nelson's Island field (21 acres) for goose browse. All of these field unit plantings made good growth and except for a couple of areas where disturbance from nearby hunting was a factor they received fine usage.

II. Wildlife

A. Migratory Birds.

1. Waterfowl.

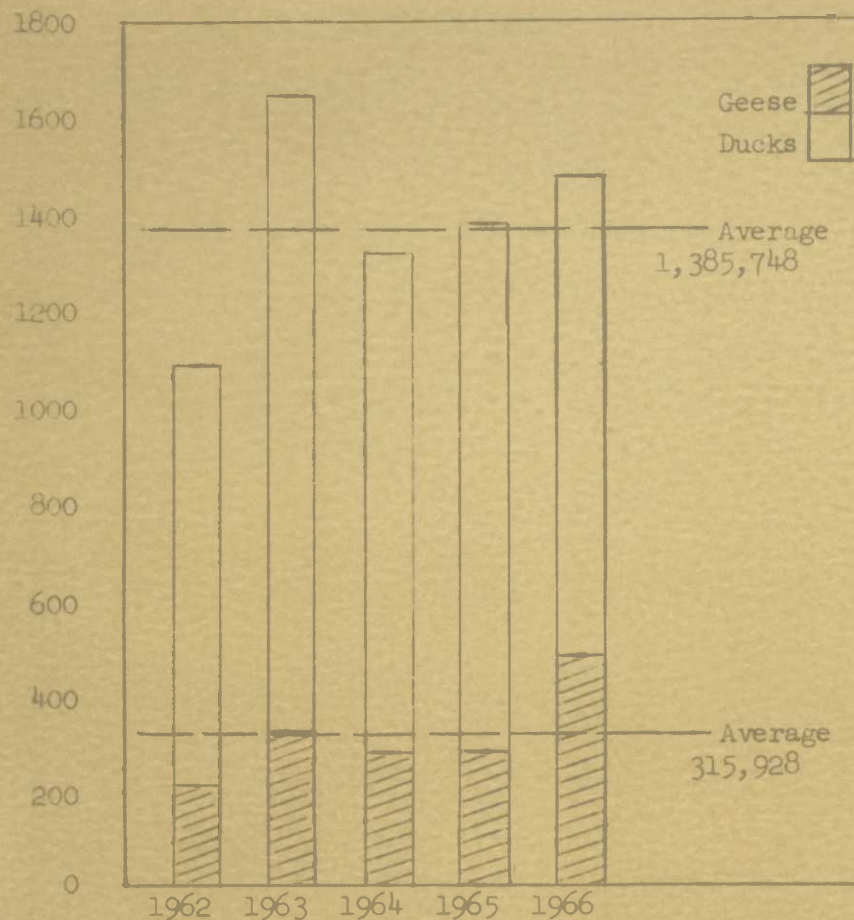
a. Swans:

A flock of ten whistling swans paid us a brief visit during the week of 11/10 - 15. They are very uncommon in this locale and these birds stayed only a few hours before they headed south.

b. Canada Geese:

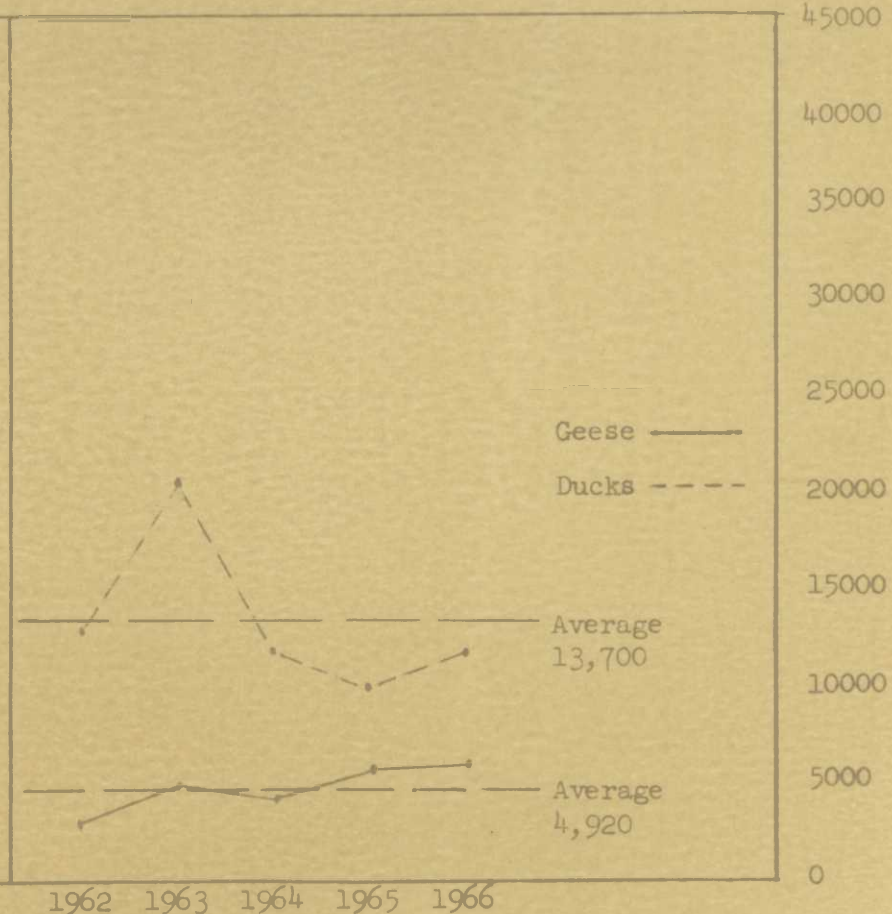
This species was found throughout the year in the refuge and vicinity, numbers and exact use areas depending upon season, weather and food conditions. Spring migration was about a week early with flight birds appearing in numbers during the first week of March. The fall migration appeared to be one to two weeks late with the bulk of birds arriving and passing over here the week of Oct. 20 - 26, instead of the usual Oct. 10 - 15 period. Scattered migratory flights were evident as late as Dec. 30 this year. Total annual use days by Canada geese was up 43% (494,685 vs. 281,535) over last year. The chief reason for this was the fact that fall and to a lesser extent spring usage was significantly greater than previous years. The mild weather pattern which extended

Thousands



Annual Waterfowl Use Days
Canada Geese and all Ducks
Five Year Period 1962-1966
Parker River N. W. Refuge

Hundreds



Peak Populations -Canada Geese & Black Ducks
Five Year Period 1962-1966
Parker River N. W. Refuge

through December and encouraged greater numbers of birds to linger on was a factor in this. A new peak of 6,500 geese was reached this year compared with 6,000 last year. Seasonal use patterns were similar to the past with 67% occurring during the fall and early winter, 30% in winter and spring and 3% during the summer.

Upland field units were utilized well again this year although some disturbance of birds using Stage Island Pool field by nearby boundary hunters reduced use of that unit. Also Nelson's Island field (21 acres) was largely unused over the past fall due to the fact it was included within one of our open public hunting units. Steady usage of the tidal marsh occurred throughout the year by various segments of the goose population.

Production of Canada geese, although limited, increased this past year. A total of 45 young were produced in an estimated 8 broods, a 33% increase over last summer's 30 young. As in the past, nesting occurred generally in the North and South Pool areas on islands and muskrat houses. Broods utilized the pools and also the salt marsh areas between the dikes and Plum Island Sound.

Limited numbers of snow geese visited the refuge during the year. A maximum of 10 were noted with the Canada's in the fall. At least two white-fronted geese were also on hand this past fall, with one being recovered by a Youth hunter. An estimated maximum of 50 brant were noted early in the past fall. They occur here sporadically and in very limited numbers. A few were taken by nearby hunters before they moved out.

Goose use days during current year totalled 494,685 over 5,000 acres of goose use habitat for a goose use per acre of waterfowl habitat figure of 99. Production/wetland acre:.022.

c. Black Ducks:

In 1966 black ducks were on hand over the year in varying numbers dependent on tide and weather conditions. They are normally the most abundant species found in the area although they fluctuate markedly with the above mentioned conditions. Migrations appeared to be normal this year based on field observations. Total annual use days this year (1,229,925) was up 11% over that recorded in 1965 (1,098,580). Peak numbers in the fall of 1966 were 12,000 compared with 10,000 last year. The increase took place chiefly during the fall period this year, as greater numbers of blacks lingered

through December as a result of the mild weather pattern. Seasonal use was roughly similar to last year with 66% taking place during fall and early winter, 31% in winter and spring and 3% in the summer. Black Ducks again utilized a variety of habitats including all pools while available and tidal salt marsh areas throughout the year.

Production of black ducks continued at a low rate in the refuge based on nest box checks and brood observations. Six broods produced an estimated sixty young. The trend of recent years has shown an apparent decline in nesting densities and success when compared with that found in the earlier years of the project.

d. Other Ducks:

Green-winged teal made fair use of the refuge in 1966, much less so than in 1965 and previous years. Total use days the past year (102,030) was 16% under last year's number (121,880). Peak numbers reached only 2,500 this year compared with 5,000 in the fall of 1965. Overall fall use in 1966 was considerably less (21%) than last year and was where the main use reduction occurred. Seasonal use followed normal patterns with 84% taking place in the fall and early winter, 12% in late winter and spring, and 4% during summer. Good use of the North, South and Stage Island pools, along with the tidal salt marsh areas, was made by these birds. Only one brood of ten young was recorded this season.

Mallard use days totalled 34,070 this year compared with 45,305 in 1965, a 25% drop. Peak number was 300. A total of five broods was noted with 50 young in contrast to recent past years when they were the most common nesting duck.

Other dabbling ducks were noted in season chiefly in the fall period. Following are the main species with yearly peaks: widgeon (800), pintail (300), blue-winged teal (200), shoveler (60), wood duck (20) and gadwall (2).

A limited number of diving ducks were seen throughout the year in the refuge, although they occur sporadically. Dabbler habitat predominates in the refuge. Species and numbers seen were: scaup (400) American goldeneye (50) Bufflehead (50), and ruddy (50). Stage Island Pool was utilized by the scaup and ruddies, along with buffleheads and some redheads (3) which are rare here.

Total duck use days in the current year (1966) was 1,487,478 on 5,000 acres of duck use habitat for a duck use per acre

of waterfowl habitat figure of 298. Duck production per wetland acre was .077.

2. Other Waterbirds.

American coots occurred in greater numbers than usual during the year, particularly in the fall-early winter period. Total use was 26,010 days with a peak of 500, all of which was confined to the fresh water pools.

All other species included in this group which normally occur here were observed over the year. Included under this were common loon, double-crested cormorant, great blue heron, green heron and black-crowned night heron. Also seen were common and snowy egrets, tri-colored (Louisiana) heron and some rare glossy ibis (4). A Brunnick's Murre in a weakened condition was found along the shore but it failed to survive.

3. Shorebirds, Gulls and Terns:

Shorebird flights were normal in regard to time, number and species insofar as field observations indicated. As usual, the heaviest flights occur in May and early June and again in late July and August, although shorebird activity is found most of the year. Golden plover and buff-breasted sandpipers, along with a reeve, were seen this year.

Gulls were observed in the usual numbers and species with no unusual occurrences. Included among those seen were black-backed, herring, ring-billed and Bonaparte's gulls.

Terns utilized the area in typical species and numbers. Common, least and rarely, black terns were most abundant. Also seen were up to nine Caspian terns in late September, an unusual species for this locale. All terns were gone from the scene by the end of October.

4. Doves:

Mourning doves occurred almost the year-round to some extent. A peak of 50 was noted in early fall in the rye fields, the area where they are normally found in greatest seasonal abundance.

B. Upland Game Birds.

Ring-necked pheasants were present throughout the year. They usually concentrate their use around the crop fields and fresh water marsh areas along the main road going through the refuge. The total population is small and fairly stable due to the limited habitat and natural mortality factors. A few

broods of young were seen during the summer. At year's end an estimated 120 birds were on hand.

C. Big Game Animals.

A few observations were made this year of our very small population of white-tailed deer. As a result of limited habitat and added disturbance from our heavy public use, the deer numbers remain at low level. The animals move to and from the mainland at will. Three fawns were seen this summer. At the close of the year an estimated 8 animals were found.

D. Fur Animals, Predators, Rodents and Other Mammals.

Muskrats were found in limited numbers during the year. The continued dry conditions, with resultant lowered water levels and reduction in available marsh areas has exerted an effect. Water in the North and South Pool areas was well into the borrow pits and creek channels most of the year (following the spring breakup and natural drawdown thereafter) forcing muskrats to use bank dens. Stage Island Pool in contrast, stayed up well over the year and muskrat use was good. A house count was conducted in December. The estimated populations for the past five year period is given below.

Muskrat Populations (Fall)

	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>
Stage Is. Pool	175(35) ¹	-	10(1)	30(6)	250(50)
South Pool	75(15)	100(20)	10(2)	10(2)	15(3)
North Pool	175(35)	500(100)	30(0)	25(5)	50(10)
	425	600	50	65	315

1. Figures in parenthesis equals number of houses.
2. Figures estimated and based partially on house counts.

The usual range of predators and rodents was on hand this year. Included among these were red fox, raccoon, striped skunk, woodchuck and weasels. At least two red fox, two striped skunk and one muskrat were removed during the year in conjunction with normal work activities.

Cotton-tailed rabbits were found throughout the year in the refuge in varying numbers. They are evident on any early morning or late evening trip down the road through the refuge, and at current levels pose no management problem. They also serve as a useful buffer species.

E. Hawks, Eagles, Owls and Crows.

All normally expected hawk species were noted throughout the year along with occasional unusual ones. Certain species, such as the peregrine falcon are seen with decreasing frequency, lending added support to the fact they are in decline. Only one was seen the past fall by station employees. A few marsh hawks and sparrow hawks were noted.

Rough-legged hawks were also seen into spring and again from mid-fall on to the end of the year.

No eagles were seen by station personnel or reported by any birders.

Snowy owls showed up on schedule (one on 12/2) but not in as large numbers as in past years. One or two short-eared owls were on hand at year's end.

F. Other Birds.

Various other birds were seen this year including snow buntings, pine siskins, white-winged crossbills, a mocking bird and a loggerhead shrike.

G. Fish.

Surf fishing along the refuge ocean beach was generally slow this year. School stripers were in from time to time, but many of them were sub-legal (under 16") year classes and only a few larger fish (25# and up) were taken. Fishing effort dropped off and the season could be considered only fair.

H. Reptiles.

Nothing to report in this category as the group is generally poorly represented on Plum Island.

I. Disease.

A localized small die-off of some of our Canada geese took place in the Stage Island Pool vicinity in the spring. The trouble was diagnosed and then verified by University of Massachusetts Dept. of Animal Husbandry representatives as lead poisoning. (See NR -5).

III. Refuge Development and Maintenance

A. Physical Development.1. Marsh & Water:

- a. Serviced goose and duck nesting boxes on refuge.
- b. Mowed North pool, South pool and Stage Island dikes.

2. Roads and Trails:

- a. Built two new parking lots to accommodate 30 cars each. for the Parker River and Nelson's Island hunting areas.
- b. Built 10 car parking lot on Plum Island below the pines in the Nature Study Area.
- c. Graded and hauled gravel to improve the boat outhaul ramp on Plum Island.
- d. Graded and hauled gravel to maintain refuge road and plowed snow as necessary during the period.
- e. Several existing parking lots were top dressed with crushed gravel.

3. Fencing and Posting:

- a. Refuge boundary checked, new posts and signs replaced where needed.
- b. Several regulation, directional, traffic control signs, etc. were erected.
- c. Received 1,196 steel sign posts.
- d. 370 ft. of chain link fence was replaced at the headquarters area.

4. Buildings:

- a. The hall and two upstairs bedrooms were refinished during the period. New plasterboard, ceiling tile and additional electrical outlets installed in each room.
- b. A new 1000 gallon septic tank for laundry water was installed for the residence.

- c. A new gate for hunter control was installed south of the main parking lot and boat outhaul areas.
- d. Four lifeguard towers were constructed and utilized.
- e. Thirty picnic tables were constructed and placed in use.
- f. Thirty fireplace units were purchased and placed in use in recreational area.
- g. The radio tower at headquarters was painted.
- h. The office was partitioned to provide a private office and a visitor information area.
- i. An indoor electric switch was installed with a red warning light for our gasoline pump.

5. Equipment:

- a. A new 20 hp Johnson outboard motor and steering control unit was purchased and installed on our Boston Whaler.
- b. A snowplow for a 4-wheel drive pickup truck was transferred from Moosehorn N. W. Refuge and installed.
- c. Our GMC dump truck was transferred back from Moosehorn N. W. Refuge.
- d. The refuge brushcutter was repaired.
- e. Our Ford Ranch Wagon was transferred back from Moosehorn N. W. Refuge.
- f. We received a new Bell & Howell 16mm sound projector with both magnetic and optical sound.
- g. A Kodak Carrousel 35 mm slide projector was transferred from the Monomoy N. W. Refuge.
- h. Five battery powered megaphones were purchased for visitor control.
- i. Four transistor battery powered two-way radios were purchased for use in our enforcement and visitor control programs.
- j. Routine repair and maintenance to major and minor equipment.

B. Plantings.1. Aquatic and Marsh Plants:

- a. The South pool 22 acres were planted to Jap millet, however a poor crop resulted.

2. Trees and Shrubs: None.3. Upland Herbaceous Plants: None.4. Cultivated Crops:

- a. One hundred acres were plowed, disced and seeded to Winter Rye (Balboa) for goose browse at the following locations: Cross Farm 27 A., Stage Island 20 A., South pool edge 8 A., North pool edges 24 A., and Nelson's Island 21 A. These fields were top dressed with 500 lbs. of 10-10-10 fertilizer to the acres.

Progressive Use of Cereal Grain by Waterfowl

		<u>Jap Millet</u>	<u>Winter Rye Browse</u>
Sept.	1	-	-
	15	-	-
Oct.	1	-	-
	15	10%	15%
Nov.	1	10%	15%
	15	5%	20%
Dec.	1	-	15%
	15	-	10%

C. Collections and Receipts:1. Seed and Other Propagules: None.2. Specimens: None.D. Control of Vegetation:

1. Mechanical Control: Approximately 50 acres of loosestrife, phragmites and cattail were mowed during the last week of July and the first week of August.

The North pool dike was mowed to control (mainly sweet sumac) woody vegetation.

E. Planned Burning: None.

- F. Fires: No reportable fires occurred during the period. During August, September, October and November the fire hazard was very high due to the lack of precipitation (9.18 inches below the average amount of rainfall fell) and the high public use during the period.

IV. Resource Management

- A. Grazing: None.
- B. Haying: One special use permit was issued for the removal of 50 tons of salt hay. Fees: \$50.00.
- C. Fur Harvest: None.
- D. Timber Harvest: None.
- E. Commercial Fishing: None.
- F. Other Uses: Receipts from the Special Use Permits for rental of land and/or buildings amounted to \$876.00.

Three Special Use Permits were issued to the Colonial Retriever Club for the purpose of conducting three retriever trials. No charge.

One Special Use Permit was issued to Miss Diana Seacord, a student at Smith College, for a plant ecology study. No charge.

Entrance fees for recreation amounted to the following:

\$7.00 Golden Passport (844 sold)	\$5,908.00
\$1.00 Daily Motor Vehicle Tickets	\$12,370.00
\$.50 Daily Individual Tickets	\$1,191.00
SUB-TOTAL	\$19,469.00
Honor System Collections from the Money Tree	\$1,190.00
GRAND TOTAL RECEIPTS	\$20,659.00

V. Field Investigation or Applied Research

- A. Waterfowl Banding.

A total of 2,427 waterfowl were banded over the year in

pre and post-season operations. A major effort was made to band 10% of our wintering black duck population in January, February, and early March. This was a cooperative program in conjunction with some other coastal New England states in preparation for the special post season black duck hunt. The refuge banded 1,500 blacks in this program chiefly by use of cannon net traps. Significant numbers of wintering Canada geese were also banded this year. Pre-season banding (summer and early fall) by student assistants using conventional cage traps was also substantial. See form NR-1D.

VI. Public Relations

A. Recreational Uses:

Again this year our public use season ran from Memorial Day to Labor Day but visitor use of the refuge began with good weather in April and continued into November. Because of unseasonably warm weather we were still experiencing good weekend visitor use throughout December.

This was the second year that Parker River was designated as a fee collection area under the provisions of the Land and Water Conservation Fund Act of 1965. We detected a considerable drop in total public use from last year based on traffic counter figures. We believe this decrease in visitor use to have been generated by two disassociated actions. In the first situation we eliminated our seasonal entrance fee. During 1965 a \$1.25 individual season ticket, good only at Parker River, was sold. It is our opinion that the vast majority of our public use comes from within a 50-mile radius of the refuge. Within this area we are the only designated fee collection area, and many people are interested in coming to Parker River on repeated occasions who do not have the opportunity of visiting other Federal recreation areas in the country. These people, in our opinion found the \$1.25 individual season pass to be a good buy but apparently were unwilling to spend the extra amount for the \$7.00 Golden Passport, good anywhere throughout the country. In the second situation we established a regulation in 1966 which prohibited bringing alcoholic beverages onto the refuge. During the 1965 season we found that trouble more often occurred with groups where alcoholic beverages were being consumed. This was particularly true with the teenage and young adult groups. Massachusetts presently has a law which prohibits minors under the age of 21 from transporting alcoholic beverages in an automobile where no adult is present. Therefore, in the 1965 season, minors who wished to drink alcoholic beverages tended to avoid state recreation areas where they were under observation by state authorities, and to congregate on our Federal area where our enforcement officers

had no authority to enforce this state regulation.

The prohibition against alcoholic beverages coupled with the elimination of the low cost seasonal individual entrance pass have in our opinion been the determining factors responsible for the drop in our recreational usage from 240,265 in 1965 to 156,275 in 1966. In addition, in the accompanying table, you will notice a drop in visitor use from 279,500 in 1963 to 262,000 in 1964 and to 240,265 in 1965. This is probably due to the fact that we began charging fees in 1964. Since in 1964 we had not yet come under the provisions of the Land and Water Conservation Fund Act our fees were nominal in nature and while they resulted in a slight drop in usage the drop was not a significant part of our total public use.

While the elimination of alcoholic beverages on the refuge resulted in a reduction in public use, the action also proved extremely beneficial to our program of public safety and control. Whenever an agency is required to accommodate large numbers of a visiting public in a recreational atmosphere, it is essential that the image presented this public be one of gracious welcome, extreme courtesy and patience, and firm and complete control over both the area and the visiting public in any situation that might arise. Should any of these elements be lacking, the agency and the personnel administering the area are in trouble. It was in the last element that the restrictions against alcohol were of benefit. We believe that it is not as significant that our public use dropped as a result of this action as it might at first appear. We expect that our public use will start to increase in the coming year and continue in an upward trend in succeeding years as it becomes apparent to the using public that we are offering a high quality recreational experience which is at the same time safe, well managed and free from rowdyism.

One essential requirement of maintaining firm control of a recreational situation is the employment of an adequate personnel complement. Accordingly, during the 1966 season we employed three gatemen and four lifeguards to augment our staff. In addition it proved desirable to utilize our enforcement personnel in a patrol function as much as possible, therefore, the practice of using these personnel on weekend gatework will be decreased during the coming year whenever feasible.

One problem which has remained with us is the state area located on the south boundary of our refuge. This state recreation area is accessible on land only by passing through the full length of our refuge. The state area is for the

most part unsupervised and no entrance fee is charged. Since by law we must provide a right-of-way through our land to this area it presents a constant problem. While the assumption of control by the state of this "Bar Head" area was a tremendous improvement over the private control which had existed prior to 1965, many problems remain to be dealt with. A visitor to the state land need only state at our gate that he is going to the state land and we must pass him through the gate without charging him any entrance fee. We continuously find these people later using our area, having avoided the entrance fee. Whether in the majority of cases this is intentional or not is unknown but it has created a weakness in our ability to effectively control entrance upon the refuge.

Another problem related to visitor use of Parker River has been the need for a public toilet - bathhouse facility in our recreation area. We anticipate receiving development funds for the toilets this coming fiscal year and the bathhouse has been scheduled for the 1969 program year.

Recreational Use Table

	<u>1966</u>	<u>1965</u>	<u>1964</u>	<u>1963</u>	<u>1962</u>
Hunting	4,075	1,210	1,100	-	-
Nature Study	12,376	14,416	33,000	32,000	30,000
Clamming	1,563	2,403	32,000	31,000	26,400
Fishing	4,688	7,210	-	-	-
Berry & Plum					
Picking	1,081	1,202	7,400	7,000	6,000
Picnicking	55,407	84,573	184,500	205,000	154,000
Swimming	10,761	21,141	-	-	-
Miscellaneous*	<u>66,324</u>	<u>108,110</u>	<u>4,000</u>	<u>4,500</u>	<u>4,100</u>
Sub-totals	156,275	240,265	262,000	279,500	220,500
Boating	-	-	-	-	12,000
Totals	<u>156,275</u>	<u>240,265</u>	<u>262,000</u>	<u>279,500</u>	<u>232,500</u>

*Miscellaneous represents 66,324 visitors classed as driving and sightseeing.

B. Refuge Visitors.

Please see next page.

<u>Visitors</u>	<u>Organization</u>	<u>Purpose</u>	<u>Date</u>
Carl J. Gruener	R.O.Asst. Reg. Supv.	Cannon Net	1/7/66
	M. & E.	Demonstration	"
Messrs. Brown & Van Weelden	U. S. G. M.	" "	"
N. H. & Mass.	Agents	" "	"
Dale E. Sutherland	Biologists		
	R.O.Asst.Reg. Supv.	Mosquito	2/10/66
	Refuges	Control	3/1/66
Robert W. Spencer	Supt.-Essex Co.	Mosquito	
		Control	
		Regulations	3/2/66
Messrs. Amidon, Gibbs & Lynch	Mass. Recreation Program		
Mr. Batchelder	U.S. Dept. of Agriculture	Gypsy Moth Control	3/8
	Soil Conservation Service	Discussed	3/28/66
Mr. Roger Williams	Colonial Retriever Club	fertilizers, etc.	
Richard Thurlow	Mass. Audubon	Field Trial	4/5/66
James Baird		Trails and Monuments Management	4/5/66
		practices	4/12/66
Douglas Masters	Maine Fish & Game	Plans	"
Wm. Pepered	" " " "		4/15/66
Paul Steel	R.O.Asst.Reg.Supv.		
	Refuges		
James J. Guthrie	R.O. B & F Officer	Orientation Tour	4/19/66
		Planning	8/12/66
Messrs. Richard, Avery, Hildredth & Smith	Mass. & Maine Audubon	tour.	
Hon. Klaus Curtius	N.Y. German Consulate	Refuge tour.	8/16/66
W. R. De Garmo	Mosquito-Wildlife Coordinator	Paper on Mosquito Control	8/18/66
Mr. C. D. Saults	C.O. Chief, Conservation Education	Tour	8/22/66
Mr. Plunkett	Mass. Public Health "	re wells	9/21/66
Merton Radway	R.O.Asst.Reg. Supv.	Inspection	9/26 & 9/27/66
	Refuges		9/29/66
D.Bredernitz	Realty Specialist	Visit	
	R.O.		
Rex C. Tice	R.O.Reg.Supv.	Enforcement	10/11/66
	M & E		
Prof. Jenkins	Univ. N. H.	Plan tour	10/30/66
Prof. Connover	Univ. Rhode Is.	Marsh study	11/4/66
Messrs. Hebb, Balch & Dockery	Mass. Recreation	South end.	11/16/66

<u>Visitors</u>	<u>Organization</u>	<u>Purpose</u>	<u>Date</u>
F. George Spoden, Jr.	C. O. Chief, Div. of Realty	On way to Maine	11/17/66
Harvey Warner	R. O. Realty Officer	"	"
G. T. Nightingale	Refuge Manager Bombay Hook	Visit	12/20/66

Occasional visits were made by the following: Personnel from Massachusetts Fish and Game, Mass. Dept. of Natural Resources, Mass. State Police, and local police.

Headquarters was visited frequently by: birders, students, teachers, reporters, U. S. Game Management Agents, and Mass. Conservation Officers.

C. Refuge Participation.

1. Newspaper coverage consisted of 1181" of newsprint and photographs.
2. A Cannon Net demonstration was conducted on the refuge and was attended by Regional Office personnel as well as refuge employees.
3. Sixty-two Boy Scouts, Girl Scouts and Leaders were supervised by refuge personnel in construction and installation of nesting boxes and platforms, clearing and constructing nature trails, and in trail maintenance.
4. Conducted tours:

<u>Date</u>	<u>Name</u>	<u>Members</u>	<u>Organization</u>
4/27/66	W. L. French (Gt.Md.)	85	League Women Voters
"	" " " (Gt.Md.)	200	School children
5/5/66	W. R. Forward	7	Nichols College
5/11/66	French & Grover	23	Exeter High Students
5/12/66	Forward	12	Ipswich " "
5/13/66	Forward	17	" " "
5/14/66	Forward	21	Boy Scouts
6/17/66	Forward	30	Andover students
9/21/66	Forward	14	Salty Marsh Club
10/9/66	H. O'Connor	40	Church group
11/17/66	Forward	23	Thompson School of U. N. H.

Several self-conducted tours were made by B. U. Summer School Biology Teachers, Masconomet Regional High students and adults, and the Weston School. These groups consisted of 102 individuals.

5. Meetings.

<u>Date</u>	<u>Name</u>	<u>Organization</u>
1/20/66	Reg. Dir. Griffith, J.C. Appel and W. L. French	League of Essex Co. Sptsmen
2/15/66	Reg. Dir. Griffith and W. L. French	P. I. Surfcasters
2/17/66	W. L. French	Essex Co. League Sptsmen
3/1/66	W. L. French	with D. Sutherland and R. Spencer - Mosquito Control Committee - Surfcasters and MBBA
3/2/66	W. R. Forward	presented "Waterfowl Tomorrow" to Judges Espovich, Kelleher and Ferace.
3/5/66	W. L. French and N. Marble	Committee - P.I. Surfcasters, MBBA, & Saltwater Alliance
3/11/66	W. L. French	Committee - Georgetown Women's Club
3/31/66	W. L. French	Messrs. Drury, Baird and Morgan - Mass. Audubon
4/1/66	W. L. French	League Essex Co. Sptsmen
4/13/66	W. L. French	N. E. Mosquito Control
4/20/66	W. L. French and	Conference
4/21/66	W. R. Forward	Div. Forests - Mr. Amidon
5/27/66	W. L. French	Greenhead Conference-Essex Ag.
6/8/66	W. L. French	w/Messrs Steel & French attended meeting of Brave Boat Harbor Assoc. Kittery Pt., Maine
7/30/66	H. J. O'Connor	Danvers Fish & Game
9/14/66	H. J. O'Connor	Audubon group at Great Meadows
9/14/66	H. J. O'Connor	Met with Parker River Watershed Council
9/20/66	H. J. O'Connor	Met with Surfcasters
10/12/66	Reg. Dir. Griffith & H. J. O'Connor	Danvers Fish & Game Club
10/13/66	H. J. O'Connor	Rowley Selectmen
10/24/66	H. J. O'Connor	Met Mr. Packard of Maine Audubon and Mr. Skillen of Me. Historical Society
11/10/66	H. J. O'Connor and W. R. Forward	Met with Maine Fish and Game personnel.
11/15	H. J. O'Connor and W. R. Forward	

6. Talks.

<u>Date</u>	<u>Name</u>	<u>Organization</u>	<u>Location</u>
1/4/66	W. French	Amesbury Y. M. & Y.W. 20 members	Amesbury
1/13	W. Forward	Central Church Ladies 12 members	Newburyport
2/3	W. French	Lions Clubs 30 members	Greenville, N. H.
2/8	W. French	State Line Club 33 members	So.Hampton, N. H.
2/14	W. French	Essex Agri.Class 12 members	
2/14	W. French	Amesbury Garden 14 members	Amesbury
3/3	W. French	Pine Grove School 290 students	Rowley
3/9	W. Forward	Grubbers' Garden 18 members	W.Barnstable
3/17	W. French	Essex Co. League 55 members	Ipswich
3/23	W. French	State Line F & G 33 members	So.Hampton
4/4	W. French	Ipswich R. Sanctuary 150 members	Ipswich
4/5	W. French	Belleville Men's Club 21 members	Newburyport
4/12	W. French	Hav. Dog & Gun 100 members	Haverhill
5/2	W. French	Essex Co. Sptsmen 21 members	Newburyport
6/16	W. French	Essex Co. League 43 members	Ipswich
8/31	H.O'Connor	Cape Cod Nat'l Seashore 400 attended	Orleans
9/6	H. O'Connor	Whittier Home Assoc. 30 members	Amesbury
9/12	W. Forward	Ipswich R. Sanctuary 80 members	Ipswich
9/15	H. O'Connor	League Essex Co.Spts. 50 members	Ipswich
9/21	H. O'Connor	Salty Marsh Garden Club - 14 members	Headquarters
10/3	H. O'Connor	Essex Co. Sptsmen 30 members	Newburyport
10/8	H. O'Connor	N.E.Advisory Bd. for F & G Problems 15 members	Salem

<u>Date</u>	<u>Name</u>	<u>Organization</u>	<u>Location</u>
10/28	W. Forward	Brookwood School 150 students	Manchester, Mass.
11/22	O'Connor	North Shore Rod & Gun 50 members	
11/28	H. O'Connor	Father-son group 40 members	Newbury, Mass.
11/29	H. O'Connor	Rotary Club 50 members	Newburyport

D. Hunting:

1. Several major changes were inaugurated in our hunting program at Parker River in the 1966 season. For the first time the West bank of Broad Sound was opened to hunting. This comprised two areas known as the Parker River Area B (see attached map) lying just south of the Parker River and North of Mud Creek, and the Nelson's Island Area C lying between Mud Creek and Nelson's Island Creek. Area B was 290 acres in extent and Area C was 365 acres in extent. Parking lots were constructed at both areas. The corridor at Pine Island was also used again this year and this area known as Area A was 220 acres in extent. Finally, on Plum Island proper, the Youth Hunting Area D was continued and this area was 210 acres in extent. This made a combined total of 1,085 acres which were opened to public waterfowl hunting during the 1966 season.

Another major change was in the length of the Refuge hunting season and bag limits. In 1965 we held only a three-day special goose hunt. This year our season and bag limits conformed to the state season and bag limits including the special Black duck season. This meant that our season lasted from October 15, 1966 to December 8, 1966 and continued with the Special Black duck season and Canada goose season from December 15, 1966 to January 7, 1967. The bag limits for ducks and geese were the same on the refuge as elsewhere in the state. This avoided a great deal of confusion for the hunter over seasons bags and hours but markedly increased the requirements on the part of the refuge staff for hunter control both administratively and in field enforcement and patrol.

Administratively we followed the procedure of issuing permits (see attached form) on Saturdays and holidays. On both weekdays and Saturdays and holidays limits as follows were established on the various areas: 25 on area A; 50 on area B; 50 on area C; and 25 on area D. Since area D was only used on four Saturdays during the season by the youth waterfowlers we can discount that area from our adult hunter figures. We, therefore, had an upper limit of 125 hunters per day on the

three regular hunting areas (A, B and C). As a rule, these areas did not fill up on weekdays, so our decision not to issue permits on weekdays seems to have been justified. Likewise, our issuance of permits on Saturdays and holidays seems to have produced the desired effects. Since this year we issued permits only by mail in advance instead of at the gates, the check in process was greatly shortened in time and ran much more smoothly. Further, the hunter was assured at the time he left home that he would have a reserved place to hunt and that it would not be overcrowded. We of course did not have to issue permits in the field exposed to the cold, darkness and elements. While there were some complaints about having to write in advance for a permit, most hunters agreed that this year's system was a decided improvement over last year's method. During the hunt this year we permitted the hunters to construct blinds and use decoys and retrievers. However, there were many who preferred to jump shoot. This created some dissatisfaction on the part of hunters who came fully equipped, for often a jump shooter would wander into the vicinity of a blind which was stooled out and cause birds to shy away. Consideration will be given this year to permitting only blind hunters in one area (B or C) and jump shooters only in the other. The Area A (corridor) will remain for pass shooting.

In the field our activities were intensified, specifically in the patrol function and more officers were used at one time. Each hunting area had a gate guard who checked hunters in and out and collected bag data. Gates were operated on Saturdays and holidays only. During the week an honor system of reporting bag data was utilized. Each area had an enforcement officer on foot duty on Saturdays and holidays. The gate attendant did not have enforcement authority but all personnel were radio equipped so a gate attendant could call an officer on a moments notice if it became necessary. Each hunter was checked through the gate in the morning by the enforcement officer working with the gateman. Then the officer worked independently in the field. Since each hunter was subject to an inspection at the gate for license, duck stamp, refuge permit and plugged gun, the violations in these areas were reduced to a nominal number. In addition to the above procedure, two roving boat patrols operated in Broad Sound and the various tidal creeks and inlets along the refuge boundaries and the various hunting areas. Two roving land patrols (one on the west bank and one on Plum Island) were also operated. These additional procedures served to inculcate in the minds of all that we were maintaining effective control of hunting activities on the refuge. Most hunters replied with a spirit of pleasant cooperation.

For the second year in a row the Youth Waterfowler's Hunt was

held at Parker River. This hunt is basically a new approach to the problem of educating young hunters early in the proper methods, procedures and ethics of waterfowl hunting. The cooperative program prior to the hunt included sportsman's clubs, State gun safety instructors and Massachusetts Audubon Society people who combined to teach various facets of the educational program. The hunt provided the young hunters who had completed the basic preliminaries an opportunity to apply the lessons they had learned in training to the field under controlled, but good conditions. Each youth hunter was accompanied in the blind with an experienced waterfowl hunter who did not hunt himself but served in an advisory capacity to the young hunter. While the number of boys who participated was relatively low (probably due to an insufficient amount of advance publicity) those who participated were enthusiastic in their support of the program.

Following is a presentation of hunting data for the 1966-67 Parker River Hunting Season:

Regular Season Hunting (Oct. 15th - Dec. 8th.)

Hunters participating -	3,026	
Birds killed - - - - -	611	
Estimated cripples - - - - -	153	(25%)
Total	764	

Birds killed per hunter - - - - - .20

Special Black Duck Season (Dec. 15, 1966 - Jan. 7, 1967)

Hunters participating -	1,019	
Birds killed - - - - -	305	
Estimated cripples - - - - -	107	(35%)
Total	412	

Birds killed per hunter .30

Youth Waterfowler's Hunt (Four Saturdays all day)

Hunters participating -	30	
Birds killed - - - - -	70	
Estimated cripples - - - - -	14	(20%)
Total	84	

Birds killed per hunter - - - - - 2.3

PARKER RIVER NATIONAL WILDLIFE REFUGE WATERFOWL HUNTING

Refuge
Office

Newburyport

MASSACHUSETTS

BOSTON

MERRIMACK RIVER

Plum Island

NEWBURYPORT

Turnpike

Airport

ROUTE 1A

Pine Is Road

A

PUBLIC HUNTING AREAS

A - Pine Island

B - Parker River

C - Nelson's Island

YOUNG WATERFOWLERS TRAINING

D - Youth Hunting Area

PARKER RIVER

Newbury
Neck Road

Marsh
Island

B

BROAD

Rd

C

SOUND

ROUTE 1A

Starkyard



Scale in Miles



EFC 660818

U. S. DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

Parker River National Wildlife Refuge

WATERFOWL HUNTING INFORMATION, APPLICATION, AND PERMIT

Waterfowl hunting is permitted on Areas A, B, C, and D (map on reverse) in accordance with state and federal regulations and the additional restrictions described below. Permits will be required for hunting on Areas A, B, and C on Saturdays and holidays during the regular waterfowl hunting seasons. No permits needed on weekdays. No Sunday hunting. Checking station will be open one hour before legal shooting time. Pits may not be dug, but natural vegetation, portable blinds, nets, tarps, or similar forms of concealment are permitted. Cutting of vegetation is prohibited. Decoys or shadows may be used. Dogs must be kept on a leash except while retrieving. Alcoholic beverages are not permitted on the refuge.

- A. Pine Island Area - Access by boat only to a marked landing area. Parking area and boat launching ramp on Plum Island side. Limit--25 hunters. Guns must be empty except when hunting in the marked corridor.
- B. Parker River Area - Access by land only on Newbury Neck Road and Marsh Avenue to a refuge parking lot where hunters must check in. Limit--50 hunters.
- C. Nelson's Island Area - Access by land only on Starkyard and Nelson's Island Roads to a refuge parking lot where hunters must check in. Limit--50 hunters.
- D. Youth Hunting Area - Land access only with parking space in Lots 7, 10, and 11. Hunting limited to successful applicants under the Young Waterfowler's Training Program on specifically designated Saturdays.

Mail applications will be accepted on a first-come first-served basis, no sooner than two weeks nor less than four days prior to the requested hunting date. Up to four hunters may apply for permits in a single envelope to permit a group desiring to hunt from the same blind to have their applications considered together. The following numbered spaces may, if desired, be used as your application for a permit to hunt on Saturdays or holidays. Mail to: Refuge Manager, Parker River N. W. Refuge, Northern Boulevard, Newburyport, Massachusetts 01950. Please print.

1. _____ 2. _____ 3. _____
Name Address Age

4. _____ 5. _____ 6. _____
Date Requested 1st Choice Hunting Area 2nd Choice Hunting Area

Enclose a self-addressed stamped envelope for return of the permit. Hunters will be required to have on their person their Refuge Permit, State Hunting License, and Federal Migratory Waterfowl Stamp. This Hunting Permit is valid for the area indicated when assigned a number and signed by the Refuge Manager.

Permit No.	Date	Hunting Area	Refuge Manager's Approval
------------	------	--------------	---------------------------

Please indicate number and species of birds taken on this hunt, and place this form in box provided at parking lot as you leave.

_____	_____	_____	_____
_____	_____	_____	_____

E. Violations:

<u>Date</u>	<u>Offense</u>	<u>Court</u>	<u>Finding</u>	<u>Penalty Imposed</u>
10/15/66	Unplugged gun	State		Warning
10/15/66	Unplugged gun	State	Nolo-filed	None
10/21/66	Early shooting	State		Warning
10/24/66	Late shooting	State	Guilty	\$25.-Loss of Lic. 1 yr.
10/24/66	Late shooting	State	Guilty	\$25.-Loss of Lic. 1 yr.
10/25/66	Late shooting	State	Guilty	\$20.-Loss of Lic. 1 yr.
10/25/66	Late shooting	State	Guilty	\$20.-Loss of Lic. 1 yrs
10/25/66	Late shooting	State	Guilty	\$20.-Loss of Lic. 1 yr.
10/25/66	Late Shooting	State		Warning
10/25/66	Late Shooting	State	Guilty	\$20.-Loss of Lic. 1 yr.
10/25/66	Late shooting	State	Guilty	\$20.-Loss of Lic. 1 yrs
10/25/66	Late shooting	State	Nolo	\$15.-Loss of Lic. 1 yr.
10/27/66	Unplugged gun	State	Guilty	\$20.-Loss of Lic. 1 yr.
10/29/66	Killing protected species	State	Guilty	\$20.-Loss of Lic. 1 yr.
10/29/66	Killing protected species	State	Guilty	\$20.-Loss of Lic. 1 yr.
10/31/66	Unplugged gun	State		Warning
11/5 /66	Hunting on refuge	Federal(Pending)		
11/5 /66	Killing protected species	State	Guilty	\$20.-Loss of Lic. 1 yr.
11/12/66	Hunting on refuge	Federal(Pending)		
11/12/66	Hunting on refuge	Federal(Pending)		
11/21/66	Late shooting	State	Nolo	\$10.-Loss of Lic. 1 yrs.
11/21/66	Late shooting	State	Guilty	\$10.-Loss of Lic. 1 yr.
11/22/66	Unplugged gun	State	Nolo	Filed
11/24/66	No license, stamp, unplugged gun	State		Warning
11/26/66	No license or duck stamp	State		Warning
11/26/66	No license or duck stamp	State	Guilty	\$40.-Loss of Lic. 1 yr.
11/26/66	No license or duck stamp	State	Guilty	\$40.-Loss of Lic. 1 yr.
11/26/66	No license or duck stamp	State	Guilty	\$40.Loss of Lic. 1 yr.
11/26/66	Hunting on refuge	Federal(Pending)		
11/30/66	Hunting on refuge	Federal(Pending)		
11/30/66	Hunting on refuge	Federal(Pending)		
12/26/66	Killing bird out of season	State		Warning (Minor)

In addition to the above there were numerous petty violations of refuge regulations which were handled by talking to the subjects and recorded in the headquarters violation file.

F. Safety:

1. Twelve formal safety meetings as well as weekly safety discussions were held. The main topics discussed were accident prevention, safe boating, fire prevention, safety clothing, near misses and potential hazards.
2. No accidents occurred during this reporting period.
3. The following measures were taken to prevent accidents:
 - a. Periodically safety checks were made on vehicles and buildings.
 - b. Personnel were constantly reminded of the importance of safety to themselves and the project.
 - c. Each near miss occasion was carefully reviewed by the entire staff.
4. The last lost time accident occurred on 11/21/61. At the close of the period we had 556 accident free days since our last accident and 1,865 accident free days since our last lost time accident.
5. Our future safety plans call for monthly safety meetings, periodic safety building and equipment checks, as well as continued emphasis to all personnel to plan accidents out of jobs.

VII. Other Items

A. Items of Interest:

1. An annual event, the three-day retriever trial held by the Colonial Retriever Club, was conducted from September 30 to October 2, 1966. A variety of land and water events were engaged in, with participation by several classes of dogs in the North, South and Stage Island Pool areas. Interest in the trial is always good.

	<u>Dogs Entered</u>	<u>Participants</u>	<u>Gallery</u>
Sept. 30	34	38	75
Oct. 1	43	35	100
Oct. 2	25	25	150

2. Assistant Refuge Manager Forward participated in an airboat banding operation in Canada from July 16 until September 2, 1966.

3. Foreman III Stubbs attended a five-day CSC course in Supervisor's training at Boston, Massachusetts from January 24 to January 28, 1966.
4. Foreman III Stubbs and Maintenancemen Walker and Grover received diplomas from Cornell University for completing a course in conservation.
5. Refuge Manager William French was promoted and transferred into the Boston Regional Office as Staff Assistant to the Associate Regional Director.
6. Refuge Manager Harold J. O'Connor completed the 17th Departmental Management and Development Training Program in Washington, D. C. and was transferred to Parker River as Manager. He reported for duty on July 15, 1966.
7. Assistant Refuge Manager Forward attended a two week IACP Supervisory Training Course at Arden Hills, Minnesota during the spring.
8. This summer for the first time, four lifeguards were hired for the protection of the swimming public on our refuge bathing beach.
9. A bronze commemorative plaque was mounted on a large rock in our Ludlow Griscom Dune Natural Area in the summer.
10. Maintenanceman Grover Assisted Refuge Manager Moses of the Great Meadows and Monomoy National Wildlife Refuges in winter American Eider trapping and banding at Monomoy Island on several occasions during December 1966.
11. The refuge staff held their annual Christmas Party at headquarters during December.
12. All members of the refuge staff performed in an exceptional manner during our peak public use period from June through August while the refuge was undergoing a transition period between refuge managers and the assistant manager was away on detail. The successful and accident free completion of this extremely difficult period of public use is evidence of both their proficiency in their duties and their dedication to our refuge program.
13. Credits:
Sections III, IV, VI (A,D,E &F) and VII - H. J. O'Connor
Sections I, II, V, and Forms - W. R. Forward
Section VI (B & C) and typing - C. A. Welch

Narrative Report Supplement

VII Other Items (Cont.)

During 1966 new regulations were promulgated covering the operation of beach buggies at Parker River. It had become obvious during previous years that there was a conflict between those recreationists who wished to use our ocean beach for hiking, nature study, sun bathing, etc., and those who wished to operate beach buggies along the beach. Gradually it became apparent that some restriction of the operations of beach buggies on our area would have to be imposed in order to safeguard other members of the using public.

Consequently, the following regulations were placed in effect during the 1966 season. Beach buggies were permitted on the public use area of our ocean beach for fishing only, from May 1st to October 15th between the hours of 6:00 P.M. and 8:00 A.M. Fishing on foot was permitted during other daylight hours. Considerable opposition was generated to these regulations by surf fishing and beach buggy organizations. Considerable support was also received from other organizations of the using public. The regulations, however, almost completely eliminated the safety hazard imposed by the beach buggies upon pedestrian beach traffic.

During the summer and fall beach buggy operation was observed and the new regulations evaluated. While our 1966 regulations were very effective and offered a decided improvement over previous years, the Regional Director felt that some small changes extending beach buggy use could be permitted for 1967. Consequently, the season was extended two weeks from October 15th through October 31st and daytime beach buggy operation was authorized for the periods May 1st through May 29th and September 5th through October 31st. These authorized periods of daytime operation being for times before and after the summer school vacation period.

We will continue to closely observe the use of beach buggies on the refuge during the coming public use season.

B. Photographs.

Appended.

Period ending December 31, 1966.

Feb. 8, 1967
DateHarold Blomroy
Refuge Manager2/10/67
DateThomas Caplow
Regional Refuge Supervisor_____
Date_____
Regional Director

3-1750

Form NR-1

(Rev. March 1953)

WATERFOWL

REFUGE Parker River N. W.

MONTHS OF Jan. TO April, 1966

[illegible]

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)REFUGE Parker River N. W.MONTHS OF Jan. TO April, 19 66

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	3/12-18 : 11	19 - 25 : 12	26-4/1 : 13	5 - 11 : 14	12 - 18 : 15	19 - 25 : 16	26-4/1 : 17	5 - 11 : 18		
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	3,000	2,000	2,500	2,000	2,000	1,500	1,000	800	149,200	
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	100	100	70	60	60	50	50	50	7,470	
Black	4,000	3,000	2,500	3,000	2,000	1,500	1,500	1,000	382,500	
Gadwall	10								140	
Baldpate	30	30	10	10					1,050	
Pintail	500	200	100	50	50	30	20	20	9,470	
Green-winged teal	400	400	300	100	100	100	50	50	11,950	
Blue-winged teal	50	100	100	50	50	100	100	100	4,020	
Cinnamon teal										
Shoveler	10	10	10	10	10	10			420	
Wood	10								140	
Redhead										
Ring-necked	10	10	10	10	10	10			490	
Canvasback										
Scaup										
Goldeneye	20	20							980	
Bufflehead	100	50	50	50	50	50	50	50	3,970	
Ruddy										
Other										
Coot:						10	10	10	150	
				(over)						

	(5)	(6)	(7)	SUMMARY
	Total Days Use	Peak Number	Total Production	
Swans				Principal feeding areas <u>Tidal salt marsh areas and</u>
Geese	149,200	3,500		<u>fresh water pools when open .</u>
Ducks	422,600	6,810		Principal nesting areas <u>Upland areas and fresh pools.</u>
Coots	150	10		
				Reported by <u>W. Forward</u>

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

3-1750
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE Patuxent River N. W.

MONTHS OF May TO August, 1966

(1) Species	(2) Weeks of reporting period									
	5/1-7 1	8-14 2	15-21 3	22-28 4	29-6/4 5	5-11 6	12-18 7	19-25 8	26-7/2 9	3-9 10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	500	50	60	80	90	90	100	90	55	75
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	50	30	30	30	40	50	70	60	60	70
Black	600	400	200	100	150	200	300	250	225	300
Gadwall				2	4	4	4	2	2	2
Baldpate	10	10	10							
Pintail	40	20	20	10	20	20	20	10	10	10
Green-winged teal	100	50	30	30	20	20	30	20	25	25
Blue-winged teal	100	50	40	30	30	30	40	30	35	35
Cinnamon teal										
Shoveler	10	10	10	2	2	4	4	2	2	2
Wood									2	2
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead	50	40	10	2	2					
Ruddy										
Other										
European Widgeon		1	1							

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)REFUGE Parker River N. W.MONTHS OF May TO August, 1966

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	7/10-16 11	17-23 12	24-30 13	31-8/6 14	7-13 15	14-20 16	21-27 17	28-31 18			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	75	75	75	75	75	100	100	125	12,855	6	45
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	70	70	70	70	80	100	100	100	7,750	5	50
Black	300	250	300	350	450	600	600	600	40,025	6	60
Gadwall	2								154		
Baldpate									210		
Pintail	10	10	10	10	20	20	20	20	2,040	2	15
Green-winged teal	35	35	35	35	40	50	50	70	4,620	1	10
Blue-winged teal	35	35	35	45	50	60	60	80	5,500	1	20
Cinnamon teal											
Shoveler	2								350		
Wood	2	10	10	10	10	10	10	10	502		
Redhead											
Ring-necked											
Canvasback											
Scaup											
Goldeneye											
Bufflehead									728		
Ruddy											
Other											
European Widgeon									14		
Coot:											

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	:	:	:	Principal feeding areas <u>Fresh water pool areas and</u>
Geese	<u>12,855</u>	<u>500</u>	<u>45</u>	<u>total salt marsh.</u>
Ducks	<u>61,893</u>	<u>960</u>	<u>155</u>	Principal nesting areas <u>Fresh water pool areas.</u>
Coots	:	:	:	

Reported by W. R. Forward

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

3-1750
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE Parker River N. W.

MONTHS OF Sept. TO Dec., 1966

(1) Species	Weeks of reporting period									
	9/1 - 7 1	8 - 14 2	15 - 21 3	22 - 28 4	29 - 10/5 5	6 - 12 6	13 - 19 7	20 - 26 8	27 - 11/2 9	3 - 9 10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	120	130	140	150	150	400	1,000	6,500	6,500	6,000
Cackling										
Brant							50	20	10	10
White-fronted										
Snow							10	10	10	10
Blue										
Other										
Ducks:										
Mallard	100	100	100	100	150	200	200	300	200	200
Black	800	900	1,200	1,500	1,800	3,000	6,000	11,000	12,000	12,000
Gadwall										
Baldpate		25	50	100	150	700	800	800	700	600
Pintail	20	20	50	100	50	300	300	200	200	200
Green-winged Teal	100	200	400	500	650	1,000	2,500	1,500	1,000	1,000
Blue-winged Teal	150	200	100	50	50	50	100	100	50	50
Cinnamon Teal										
Shoveler	10	10	30	50	60	60	50	50	30	30
Wood										
Redhead						3	3	3	3	3
Ring-necked										
Canvasback										
Scaup							50	150	100	100
Goldeneye					10	20	20	50	50	50
Bufflehead						20	30	30	50	50
Ruddy						10	40	50	50	50
Other										
Coot:	50	50	100	100	200	200	300	500	500	500

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Parker River N. W.MONTHS OF Sept. TO Dec., 1966

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	11/10-16 : 11	17 - 23 : 12	24 - 30 : 13	12/1 - 7 : 14	8 - 14 : 15	15 - 21 : 16	22 - 28 : 17	29 - 31 : 18		
Swans:										
Whistling	70								490	
Trumpeter									70	
Geese:										
Canada	5,000	5,000	5,000	4,000	4,000	2,000	1,000	1,000	332,630	
Cackling										
Brant	10	10	10	10	10				980	
White-fronted	2	1	1	1	1	1	1	1	59	
Snow	10	10	1	1	1	1	1	1	458	
Blue										
Other										
Ducks:										
Mallard	200	200	200	100	100	100	100	100	18,850	
Black	12,000	10,000	10,000	10,000	8,000	8,000	5,000	5,000	807,400	
Gadwall	2	2	2						42	
Baldpate	500	500	400	300	100	100	100	50	41,625	
Pintail	200	300	300	150	150	150	100	50	19,600	
Green-winged teal	1,000	900	800	300	200	100	50	20	85,460	
Blue-winged teal									6,300	
Cinnamon teal										
Shoveler	30	30	30	10	10	10	10	10	3,600	
Wood										
Redhead	3	3	3						168	
Ring-necked										
Canvasback										
Scaup	100	100	100	400	100	100	50	50	9,600	
Goldeneye	50	50	50	50	50	50	30	30	3,800	
Bufflehead	50	50	50	50	50	50	30	30	3,660	
Ruddy	50	50	30	30	20	10	10		2,800	
Other										
Coot:	400	300	300	100	50	20	20	10	25,860	
				(over)						

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	490	10		Principal feeding areas Fresh water pools while open,
Geese	334,127	6,580		tidal salt marshes and mud flats, rye fields.
Ducks	1,002,985	14,433		Principal nesting areas Pool areas and upland edges.
Coots	25,860	500		
Reported by				W. R. Forward

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

5RF-10/64

(other than waterfowl)

Refuge Parkes River N. S. W.

Months of Jan. to April 19 66

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Great Blue Heron	1	3/1	4	4/30	2	4/30				30
Black-crowned Night Heron	2	4/2	14	4/30	2	4/30				100
American Bittern	1	4/30	1	4/30	1	4/30				10
Glossy Ibis	1	4/30	1	4/30	1	4/30				1
II. Shorebirds, Gulls and Terns:										
Piping Plover	1	4/15	4	4/30	2	4/30				10
Killdeer	2	3/3	10	4/30	2	4/30				30
Black-bellied Plover	1	4/20	10	4/26	1	4/30				50
Woodcock	1	4/30	4	4/1	2	4/30				100
Common Snipe	1	4/19	20	4/25	6	4/30				10
Greater Yellowlegs	4	3/31	8	4/10	6	4/30				100
Lesser Yellowlegs	1	4/1	4	4/12	2	4/30				150
Pectoral Sandpiper	3	4/22	10	4/28	2	4/30				50
Black-backed Gull	5	1/4	30	1/20	10	4/26				300
Herring Gull	2	1/4	50	1/15	5	4/30				1,000
Ring-billed Gull	2	1/10	10	2/6	6	4/30				200

(1)	(2)	(3)	(4)	(5)	(6)				
III. Doves and Pigeons:									
Mourning dove	1	3/21	15	4/10	2	4/30			60
White-winged dove									
IV. Predaceous Birds:									
Golden eagle									
Duck hawk									
Horned owl									
Magpie									
Raven									
Crow	5	1/2	30	2/15	10	4/30			200
Cooper's Hawk	1	2/2	1	3/2	1	3/2			6
Rough-legged Hawk	1	1/2	2	3/10	1	4/1			20
Marsh Hawk	1	3/31	3	4/10	1	4/30			14
Sparrow Hawk	2	2/10	6	4/1	1	4/30			40
Snowy Owl	1	1/2	3	2/26	1	3/10			30
Reported by <u>W. French & W. Forward</u>									

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1751

Form NR-1A

(Nov. 1945)

5RF-10/64

MIGRATORY BIRDS

(other than waterfowl)

Refuge

Parker River N. W.

Months of

May

to

August

19

66

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Common Loon	4	8/15	4	8/15	2	8/27				40
Red-billed Grebe	1	5/5	8	6/8	2	8/30				20
Double-crested Cormorant	20	5/10	150	8/30	10	8/30				800
Great Blue Heron	1	5/3	6	6/20	2	8/27				80
Green Heron	2	5/22	12	6/18	1	8/26				100
Common Egret	1	5/25	4	7/22	2	8/27				20
Snowy Egret	3	5/25	14	7/29	8	8/30				50
Black-crowned Night Heron	1	5/5	12	6/18	10	8/30				150
American Bittern	1	5/16	1	8/11	1	8/11				15
Virginia Rail	1	6/1	50	8/10	2	8/30				120
Worm-eating Warbler	1	6/2	40	7/29	2	8/30				60
Common Gallinule	1	7/1	4	7/13	2	7/29				10
Common Murre	1	7/23	Died 7/24/66							
II. Shorebirds, Gulls and Terns:										
Lesser Frigatebird	1	5/20	4	6/6	1	7/28				6
Black-bellied Plover	60	8/17	800	8/26	20	8/30				4,000
Reddy Turnstone	5	8/8	150	8/10	10	8/10				300
Ring-billed Gull	1	5/20	10	5/24	2	8/26				40
Greater Yellowlegs	2	5/28	700	7/28	10	8/30				3,500
Lesser Yellowlegs	1	5/30	200	7/28	2	8/30				1,000
Willet	175	8/26	175	8/26	175	8/26				300
White-rumped Sandpiper	2	5/16	30	6/15	10	7/5				50
Least Sandpiper	1	5/10	1,500	7/28	160	8/1				7,000
North-billed Dowitcher	100	7/5	400	7/10	10	8/1				4,000
Ring-billed Gull	5	5/11	300	7/10	50	8/3				9,000

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove					
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl					
Magpie					
Raven					
Crow					
Reported by				R. R. Powell	

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

5RF-10/64

(other than waterfowl)

Refuge Parsons River, N. W.

Months of May to August 1966

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove	2	5/1	150	8/30	10
White-winged dove				8/31	400
IV. Predaceous Birds:					
Golden eagle					
Duck hawk	1	5/2	1	5/2	1
Horned owl					
Magpie					
Raven					
Crow	10	5/1	50	8/20	10
Marsh Hawk	1	5/8	4	8/10	1
Sparrow Hawk	1	5/1	10	8/17	2
					200
					50
					100
Reported by					W. R. Howard

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1751
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS-
(other than waterfowl)

Refuge Parker River N. W.

Months of Sept.

to Dec.

1966

(1) Species Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production		(6) Total
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young Estimated Number
<u>I. Water and Marsh Birds:</u>									
Common Loon	1	9/10	20	10/15	2	12/30			200
Pied-billed Grebe	2	9/1	6	9/30	1	12/10			150
Double-crested Cormorant	5	9/10	100	9/30	10	12/15			800
Great Blue Heron	1	9/1	20	9/30	2	12/1			200
Green Heron	2	9/1	30	9/15	2	11/15			100
Common Egret	1	9/1	10	9/12	1	10/15			30
Snowy Egret	5	9/1	85	9/12	2	10/25			100
Black-crowned Night Heron	4	9/1	40	9/12	5	10/30			300
Common Bittern	1	9/5	5	9/10	1	9/30			30
Virginia Rail	10	9/5	40	9/15	5	9/20			100
Sora	10	9/1	30	9/30	1	10/5			150
<u>II. Shorebirds, Gulls and Terns:</u>									
Semipalmated Plover	2	9/10	150	10/5	10	10/25			1,400
Killdeer	2	9/1	20	9/25	2	11/15			20
American Golden Plover	1	9/15	20	10/5	2	11/20			30
Black-bellied Plover	10	9/5	250	9/30	10	11/30			4,000
Whimbrel	1	9/30	5	10/5	1	10/10			50
Greater Yellowlegs	2	9/15	100	9/25	5	11/10			1,500
Lesser Yellowlegs	8	9/30	150	9/25	2	11/5			3,500
Pectoral Sandpiper	5	9/30	20	10/5	5	10/15			500
Least Sandpiper	5	9/15	300	9/30	20	10/20			6,000
Short-billed Dowitcher	2	9/20	100	10/15	10	10/20			1,500
Stilt Sandpiper	1	9/20	20	10/5	2	10/10			200

See next sheet.

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove					
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl					
Magpie					
Raven					
Crow					
					Reported by _____

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
 II. Shorebirds, Gulls and Terns (Charadriiformes)
 III. Doves and Pigeons (Columbiformes)
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1751
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Parker River N. W.

Months of Sent. to Dec. 1966

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production		(6) Total	
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										

(over)

	(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:						
Mourning dove						
White-winged dove	2	9/1	50	9/15	1	12/13
						2,000
IV. Predaceous Birds:						
Golden eagle						
Duck hawk			1	11/5		
Horned owl						6
Magpie						
Raven						
Crow	10	9/1	50	10/5	8	12/30
Cooper's Hawk	1	11/5	1	11/5	1	11/5
Rough-legged Hawk	1	10/15	4	12/10	1	12/30
Marsh Hawk	1	9/1	6	10/15	2	12/31
Snowy Owl	1	11/2	3	12/30	1	12/31
Short-eared Owl	1	11/2	1	12/30	1	12/31
						300
						4
						20
						40
						10
						4
Reported by						W. R. Forward

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1750b

Form NR-1B

(Rev. Nov. 1957)

UNITED STATES

DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITATRefuge Parker River N. V.For 12-month period ending August 31, 1966Reported by W. R. ForwardTitle Asst. Refuge Manager

(1)	(2)			(3)	(4)	(5)
Area or Unit Designation	Habitat Type	Acreage		Use-days	Breeding Population	Production
Entire refuge considered one unit.	Crops	100	Ducks	1,377,483	30	155
	Upland	97	Geese	359,670	8	45
	Marsh	2,843	Swans	21	--	--
	Water	2,468	Coots	8,340	--	--
	Total	6,416	Total	1,745,514	38	200

	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			

	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
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	Marsh		Swans			
	Water		Coots			
	Total		Total			

	Crops		Ducks			
	U					

INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

- (1) **Area or Unit:** A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.
- (2) **Habitat:** Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.
- (3) **Use-days:** Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.
- (4) **Breeding Population:** An estimate of the total breeding population of each category of birds for each area or unit.
- (5) **Production:** Estimated total number of young raised to flight age.

3-1750c
Form NR-1C
(Sept. 1960)
5RF-10/64
Refuge

WATERFOWL HUNTER KILL SURVEY

Parker River N. W.

Year 1966

(1) Weeks of Hunting	(2) No. Hunters Checked	(3) Hunter Hours	(4) Waterfowl Species and Nos. of Each Bagged	(5) Total Bagged	(6) Crippling Loss	(7) Total Kill	(8) Est. No. of Hunters	(9) Est. Total Kill
7 weeks (47 days)	1,125	4,500	<u>Regular Waterfowl Season Oct. 15 - Dec. 8</u> (incl. Geese, Oct. 15-Nov. 29, Dec. 15-Jan. 7, 1967) Black Duck (427) Canada Goose (67) Green-winged Teal (60) Mallard (30) Miscellaneous (27)	611	153	764	3,026	764
3 weeks (21 days)	500	2,000	<u>Special Black Duck Season Dec. 15 - Jan. 8</u> Black Duck	305 <u>916</u>	107 <u>260</u>	412 <u>1476</u>	1,019 <u>4,045</u>	412 <u>1,476</u>
4 days (Oct. 22) (Oct. 29) (Nov. 12) (Nov. 19)	30	150	<u>Youth Waterfowler Hunt - Special</u> Canada Goose Black Duck Mallard Green-winged Teal Hooded Merganser American Widgeon Pintail Shoveler Blue-winged Teal Red-breasted Merganser White-fronted Goose American Coot	28 23 3 3 3 3 2 1 1 1 1 1 <u>70</u>			30	84
				986	274	1260	4,075	1,260

(over)

INSTRUCTIONS

- (1) The first week of hunting begins with opening day and ends at the close of hunting 6 days later. Successive weeks follow the same pattern.
- (2) The goal is to survey a minimum of 25 per cent of refuge hunters each week and to record data only from those who have completed their day's hunting. This information should be collected during each day of the week and in each area hunted in relative proportion to the hunter effort expended. When the 25 per cent goal cannot be achieved, particular care should be taken to collect representative data.
- (3) Record the total number of hours the hunters spend hunting on the refuge.
- (4) List waterfowl species in decreasing order of numbers bagged. Sample entry: Mallard (61), Pintail (36), Redhead (16), Gadwall (11), Widgeon (6), Coot (4), Canada Goose (3), Green-winged Teal (1).
- (5) Record total numbers of waterfowl bagged.
- (6) Record total numbers of waterfowl reported knocked down but not recovered.
- (7) Total of Columns 5 and 6.
- (8) Estimate the total number of hunters who hunted on the refuge during the week, including hunters checked (Column 2).
- (9) Kill sample projected to 100 per cent.
$$\text{Column 9} = \frac{\text{Column 8}}{\text{Column 2}} \times \text{Column 7}.$$

* REPORT OF BANDING ON PARKER RIVER REFUGE - CALENDAR YEAR 1966

Geese	Method of Trapping*	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
Canada	CAN	123	29					39						191
Brant														
Ducks														
Mallard	"	17	6	5				47	67		3			145
Black	"	630	387	490				259	240		32			2,038
Gr.-Winged Teal	"							2	2		4			6
Bl.-Winged Teal	"							2	15					17
Wood Duck	"							3						3
Black x Md.	"	5	2					2	2		2			13
Pintail	"		7					1	5					13
Blk. x Pin.	"							1						1
Eider														
Total Waterfowl		775	431	495				354	331		41			2,427
Other														
Mourning Dove														
Woodcock														

Quotas: Canada geese - _____; Mallard - _____; Blacks 1000+ _____; Other _____
(Winter)

*Method of Trapping: CAN - Cannon Net; CAGE - Cage; MIST - Mist Net; NITE - Night-lighting

*Cannon Traps - Bulk of Winter Banding and Oct. Banding.

Cage Traps - Part of March Winter Banding - All of Summer Banding.

Form NR-1D Drive - Summer Canada Goose Banding.

5RF-1/3/67

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Parker River N. W.

Months of Jan. to April, 19 66

(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	(5) Removals	(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd. Estimated Total	Percentage	Hunting For Re- stocking For Research	Estimated number using Refuge Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	1000 acres of dunes, brush and droplands 200 acres of fresh water marsh 1200 acres total	12	- -	70 - 30	- - -	100

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Parker River N. W. Months of May to August, 19 66

(1) Species	(2) Density		(3) Young Produced	(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd. Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	1,000 acres of brush and crop- lands. 200 acres of fresh water marsh. 1,200 acres total	8.6	4 28	40:60	-	-	-	140	Population found mainly in fresh water pool marsh and along main road from sub- headquarters on down.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Duck River N. W. Months of Sept. to Dec., 1946

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio		(5) Removals			(6) Total	(7) Remarks
	Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods observed	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant		1000 acres of brush and croplands 200 acres of fresh water marsh. 1200 acres total	10	-	-	50:50	-	-	-	120	Population occurs chiefly in fresh water pool marshes and along main road from sub-head- quarters on down.

* Only columns applicable to the period covered should be used

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey methods used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number of each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

5RF 11/66

3-1753
Form NR-3
(June 1945)

BIG GAME

Refuge Parker River N. W. Calendar Year 1966

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
Common Name	Cover types, total Acreage of Habitat	Number												
White-tailed Deer	Sand dunes, crop fields and brush 600 acres (This acreage discounts barren sand dunes)	4	-	-	-	-	-	-	-	-	-	10	8	50:50

Remarks:

Reported by W. R. Forward

INSTRUCTIONS

Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.
- (2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated total number of young produced on refuge.
- (4) REMOVALS: Indicate total number in each category removed during the year.
- (5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

116008

3-1754
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge Parker River N. W.

Year ending April 30, 1966

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total Popula- tion	
Common Name	Cover Types & Total	Acres Per Animal	Hunting	Fur Harvest	Predator Control	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
	Acreage of Habitat	Permit Number						Trappers Share	Refuge share					
Muskrat	Fresh marsh 216 A	1.4	-	-	N	ONE	-	-	-	-	-	-	-	150
Mink	(Sand dunes & Marsh)	960	-	-	N	ONE	-	-	-	-	-	-	-	4
Raccoon	" " "	384	-	-	2	shot	-	-	-	-	-	-	-	10
	(3840 acres)		-	-										
Woodchuck	Sand dunes, brush &	12	-	-	6	"	-	-	-	-	-	-	-	100
	croplands - 1200 acres		-	-										
Skunk	" " "	12	-	-	4	"	-	-	-	-	-	-	-	100
Red Fox	" " "	150	-	-	3	"	-	-	-	-	-	-	-	8
Cottontail Rabbit	" " "	8	-	-	N	ONE	-	-	-	-	-	-	-	150
Small Rodents	" " "	-	-	-	N	ONE	-	-	-	-	-	-	-	-
* List removals by Predator Animal Hunter														

* List removals by Predator Animal Hunter

REMARKS:

Reported by W. L. French

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
- (2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.
- (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
- (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.
- REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

DISEASE

Refuge Parker River N. W.

Year 1966

Botulism None

Lead Poisoning or other Disease

Period of outbreak _____

Period of heaviest losses _____

Losses:

	Actual Count	Estimated
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.) _____

Condition of vegetation and invertebrate life _____

Remarks _____

Kind of disease Lead Poisoning

Species affected Canada Geese

Number Affected Species	Actual Count	Estimated
<u>One (Canada Geese)</u>	<u>24</u>	<u>100</u>
_____	_____	_____
_____	_____	_____

Number Recovered 0

Number lost Est. 100

Source of infection Spent shot

Water conditions Satisfactory

Food conditions Satisfactory

Remarks Small localized outbreak recorded in April 1966 in area heavily shot over during previous two hunting seasons. Birds apparently picked up shot while browsing winter rye field and edge of marsh.

PUBLIC RELATIONS
(See Instructions on Reverse Side)

Refuge Parker River N. W.Calendar Year 1966

1. Visits

a. Hunting 4,075 b. Fishing 4,688 c. Miscellaneous 147,512 d. TOTAL VISITS 156,275

1a. Hunting (on refuge lands)

TYPE	HUNTERS	ACRES	MANAGED BY
Waterfowl	<u>4,075</u>	<u>1,085</u>	<u>BSFW</u>
Upland Game	<u>--</u>	<u>--</u>	<u>--</u>
Big Game	<u>--</u>	<u>--</u>	<u>--</u>
Other	<u>--</u>	<u>--</u>	<u>--</u>

Number of permanent blinds 0Man-days of bow hunting included above 0

Estimated man-days of hunting on lands adjacent to
refuge 4,000

1b. Fishing (area open to fishing on refuge lands)

TYPE OF AREA	ACRES	MILES
Ponds or Lakes	<u>--</u>	<u>--</u>
Streams and Shores	<u>--</u>	<u>6.5</u>

1c. Miscellaneous Visits

Recreation 154,275 Official 200
Economic Use 1,800 Industrial --

2. Refuge Participation (groups)

TYPE OF ORGANIZATION	ON REFUGE		OFF REFUGE	
	NO. OF GROUPS	NUMBER IN GROUPS	NO. OF GROUPS	NUMBER IN GROUPS
Sportsmen Clubs	<u>6</u>	<u>303</u>	<u>17</u>	<u>901</u>
Bird and Garden Clubs	<u>3</u>	<u>22</u>	<u>7</u>	<u>267</u>
Schools	<u>7</u>	<u>144</u>	<u>4</u>	<u>652</u>
Service Clubs	<u>-</u>	<u>-</u>	<u>5</u>	<u>215</u>
Youth Groups	<u>6</u>	<u>81</u>	<u>-</u>	<u>--</u>
Professional-Scientific	<u>2</u>	<u>42</u>	<u>3</u>	<u>128</u>
Religious Groups	<u>-</u>	<u>-</u>	<u>4</u>	<u>113</u>
State or Federal Govt.	<u>5</u>	<u>29</u>	<u>4</u>	<u>64</u>
Other	<u>1</u>	<u>1</u>	<u>3</u>	<u>415</u>

3. Other Activities

TYPE	NUMBER	TYPE	NUMBER
Press Releases	<u>35</u>	Radio Presentations	<u>-</u>
Newspapers (P.R.'s sent to)	<u>43</u>	Exhibits	<u>3</u>
TV Presentations	<u>-</u>	Est. Exhibit Viewers	<u>40,000</u>

INSTRUCTIONS

Item 1: Total of a, b, and c, equal d.

"Visit" - definition. Any person who is on refuge lands or waters during a day or part thereof for the purpose of: hunting, fishing, bird-watching, recreation, business or economic use, official visit, or similar interest. INCLUDE - those who stop within the refuge while traveling on a public highway because of an interest in the area. EXCLUDE - persons engaged in oil or other industry not directly related to the refuge, persons using refuge as most direct route or principal avenue of traffic, and those boating on navigable rivers or the Intercoastal Canal, unless they stop to observe wildlife on the refuge.

Computing visits. Where actual counts are impractical, "sampling" is used with midweek and week-end samples varied by season or weather. A conversion factor of 3.5 (of passengers per car) is used when accurate figures are not available. Each refuge will develop a conversion factor for boats based on range of usage. Count a camper once for each 24-hour period or fraction thereof.

Item 1a: Acres - of refuge open for each type of hunting.

Managed hunts require check in and out of hunters, issuance of permits, or assignment of blinds.

Other - INCLUDE crow, fox, and similar hunting.

Lands adjacent to refuge. Normally considered within 1 mile or less of boundary, unless established sampling procedures cover a wider area. For big game hunting, the distance may be greater.

Item 1b: Acres of streams open to fishing, if practical; otherwise just miles open. Information on "shores" is primarily for coastal fishing.

Item 1c: Recreation. INCLUDE photography, observing wildlife, picnicking, swimming, boating, camping, visitor center use, tours, etc. TOTAL Recreation, Official, and Economic Use visits under Item 1.

Industrial. INCLUDE persons engaged in industry, i.e., oil industry or factories. EXCLUDE these from Item 1.

Item 2: INCLUDE the "On Refuge" groups in Items 1c and 1. In "Off Refuge" column include only those group meetings in which refuge employees actually participate. EXCLUDE these from Items 1c and 1.

Item 3: Exhibits - INCLUDE displays, fairs, parades, and exhibits OFF the refuge; EXCLUDE those ON.

3-1757
Form NR-7
(Rev. June 1960)
5RF-10/64

(1)
NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS

Refuge Parker River N. W. Year 1966

Species	Collections and Receipts (Seeds, rootstocks, trees, shrubs)						Plantings (Marsh - Aquatic - Upland)						
	Amount (lbs., bus., etc.)	(2) C or R	Date	Method or Source	Cost	(3) Total Amount on Hand	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Survival	Cause of Loss
Jap Millet	1600		5/11	Purchase	288.	None	South Pool Marsh	approx. 73 lb./A	22 A	1600 lbs Seed	5/11	Fair	

- (1) Report agronomic farm crops on Form NR-8
(2) C = Collections and R = Receipts
(3) Use "S" to denote surplus

Total acreage planted:
Marsh and aquatic 22 acres
Hedgerows, cover patches _____
Food strips, food patches _____
Forest plantings _____

Remarks: _____

3-1758
Form NR-8
(Rev. Jan. 1956)
5RF-10/64

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Parker River N. W.

County Essex

State Mass.

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
Winter Rye (Balboa)					100	100	100	Winter Rye Browse	100
								Fallow Ag. Land	None

No. of Permittees: Agricultural Operations None Haying Operations 1 Grazing Operations None

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				100
Hay - Wild	50	50	\$50.00	2. Acreage Cultivated as Service Operation				100

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or state.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

TIMBER REMOVAL

Refuge Parker River N. W. Year 1946

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
NONE								

Total acreage cut over.....

Total income.....

No. of units removed B. F.

Method of slash disposal.....

Cords.....

Ties.....

.....

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

Refuge **Parker River N. W.**

ANNUAL REPORT OF PESTICIDE APPLICATION

Proposal Number

Reporting Year

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Dates of Applica- tion (1)	List of Target Pests(s) (2)	Location of Area Treated (3)	Total Acres Treated (4)	Chemical(s) Used (5)	Total Amount of Chemical Applied (6)	Application Rate (7)	Carrier and Rate (8)	Method of Applica- tion (9)
		NONE						

10. Summary of results (continue on reverse side, if necessary)



SAFETY RECORD

THE STATION HAS HAD

NO ACCIDENT REPORTED FOR _____ DAYS

NO LOST TIME ACCIDENT FOR _____ DAYS

WORK SAFELY - DRIVE RESPONSIBLY

SAFETY DOESN'T COST IT ANY

REFUGE PERSONNEL

Back Row: Donald G. Grover, Edward R. Cormier, Harry E. Sears, Raoul J. De Serres, and Norman R. Crocker.

Front Row: Catherine A. Welch, Thomas J. Stubbs, Harold J. O'Connor, William R. Forward, and Irvine H. Walker, Jr.



A view showing sun dropping towards the horizon over the North Pool Dike in the spring at Parker River Refuge.



Another springtime view of some of the wildlife of the Parker River Refuge - White-tailed deer and Canada geese.



Booth and entrance gate complex at Parker River Refuge.



Sign and "money tree" post setup which allowed visitors to make voluntary payment of fees in envelopes provided.



Refuge Mgr. H. O'Connor holding jet net cannon at special demonstration of this equipment held at the Refuge 10/5/66.



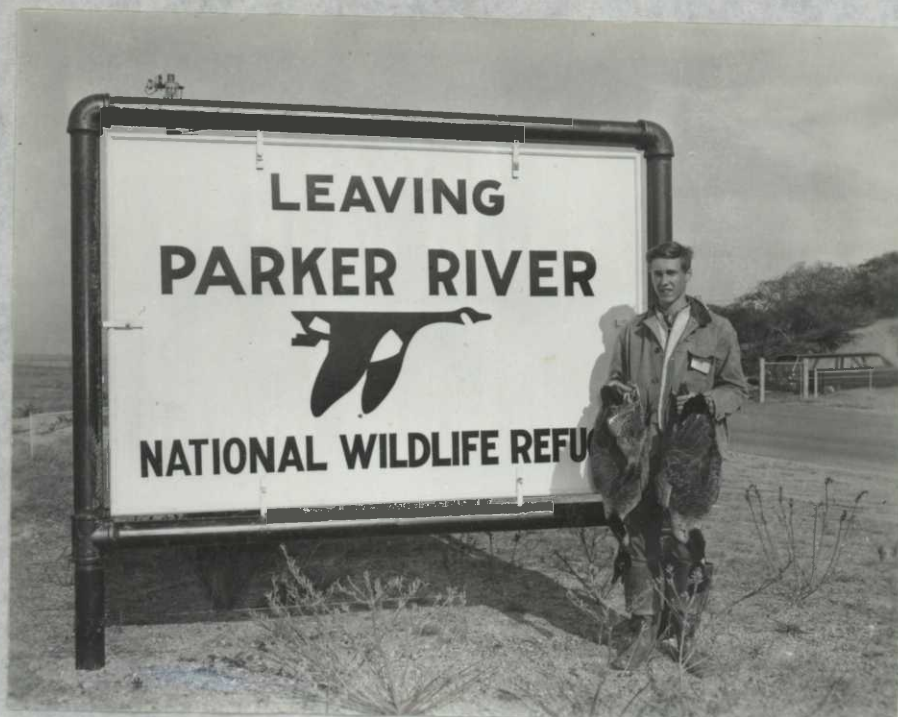
Factory Rep. H. Weisbrod of CFI, Herrin, Ill. outlining key features of jet net setup in sand.



Jet net cannons and net going out in field test shot of equipment Oct. 5.



Sand beach shot test of equipment 10/5. Jet net cannons were very fast and worked well in a variety of test situations.



Two views of successful Youth Waterfowl Hunters with birds they took during special hunts held this year.



Custom-Made HUNTERS

By HAROLD TITUS

**Here's an experiment to keep an eye on:
Federal and state wildlife officials plus
sportsmen volunteers are introducing young
gunners to the ways of waterfowl shooting**



A sportsman sponsor congratulates his protege on his success in a special waterfowl hunt in Massachusetts

HE SAT there gripping his gun tightly, as tense as only a 15-year-old can be awaiting one of life's big moments. The man beside him in the blind chuckled and peered again at the luminous dial of his wrist watch. "Just a couple of minutes more, now," the man said. "Don't be so keyed up you can't shoot!"

"Hard work," the lad whispered, twisting his head to indicate the distracting sounds from above—the yelp of Canada geese and the wing whispers of ducks. He clutched his gun even tighter. The man had a Labrador sitting between his knees, and he stroked the dog's head lightly. Out beyond, a half dozen decoys sat motionless on unruffled water. Off to the left a gun spoke; then two to the right.

"Okay now, any time," the man said lowly. "Mark! Here's a pair—blacks, most likely. Wait, now! Steady! They're going to give us a swing and maybe. . ." From the tail of his eye he saw them go past on the right, bank for a sharp turn, head back toward the open water, then swing abruptly for the decoys.

"Watch it now!" he whispered. "Let them get in range.—Now!"

The youngster got to his feet in one smooth motion. The two birds had extended their heads, dropped their feet, and set their wings for a landing just outside the decoys. They'd be within excellent range.

The gun spoke and a bird pitched sideways. The lad swung for the other but the man spoke sharply: "No, no! You're late for him. Plaster that cripple!"

The first pattern went over the swimming bird but the next caught it squarely and it turned belly up.

"Good boy!" laughed the man. "That was nice going." Then to the Labrador, "Fetch!"

He slipped the dog's leash and put his arm across the lad's shoulders, laughing happily as he felt the tremors

ranging the young body. "That's your first black duck, and there'll be chances at more ducks and at geese before we know it. Come on, lad!" he called to the dog.

They stood there while the retriever proudly brought in the duck—man and boy, not father and son, as you may have suspected. Another oddity: the man had no gun. And in all the other blinds strung along to right and left of their stand none of the men—each accompanying a boy—carried a gun.

Those men were part of a project initiated in 1965 by the Boston regional office of the U.S. Bureau of Sport Fisheries and Wildlife to accelerate the education of young waterfowl hunters. The chore was being carried out by organized sportsmen residing in the vicinity of the Parker River Federal Refuge. They had encouraged almost ninety Massachusetts boys between the ages of 15 and 18 to sign up for the project. And of this number, almost seventy were on hand to take advantage of the day's shooting offered them on the refuge, where gunning areas for the public are available. There they tried out what they had learned about game laws, hunting methods, and species identification. Each young hunter was accompanied by an experienced duck hunter as counselor, and the sixty-eight who finally participated in the shooting took a total of forty-eight Canada geese and ninety ducks as a reward for several weeks of rather intensive training.

This is the first time the Fish and Wildlife Service has engaged in the promotion of such an activity. From a modest start the program is expanding, and my guess is that it will eventually sweep the country. In Massachusetts alone this year it is likely that applications from boys will tax the shooting facilities of the refuge. Military installations in the region, which have been featuring



First things first. Having learned how to distinguish species of waterfowl, the class of apprentice gunners gets a lesson from a volunteer worker in the types of decoy and their proper placement

the development of wildlife and shooting areas, appear eager to come in. Washington also has given the nod to New Jersey conservationists who want to start a similar program on the Brigantine Federal Refuge.

Who are these lads and what did they do to earn their place in a duck-and-geese blind?

They are lads who began by applying for the privilege to William French, the superintendent of the Parker River Refuge. They were told they must find an acceptable adult counselor to guide them through the instruction sessions and to be with them during the shoot. Counselors were requested to furnish half a dozen decoys and to plan on having a retriever along if they owned one. The Essex County Conservation Council was selected as the agency to pass on the qualifications of the counselors, and with its sixteen affiliated clubs it appears to have discharged the obligation nicely. On their own, the lads were required to bring in certification from the field captain of a recognized skeet or trap club that within a year the boy had broken five out of ten clay birds. This, of course, would demonstrate a degree of proficiency in handling a gun. Local Audubon groups helped to instruct the boys in how to identify the various species of ducks they might encounter. The Massachusetts Department of Natural Resources cooperated, and of course the game agents of the Fish and Wildlife Service were always on hand. This gave the boys a valuable contact with state and Federal enforcement officers.

The boys were required to attend four evening sessions put on by various Essex Council rod and gun clubs. Photographs, motion pictures, and talks by officials gave them an idea of what a good sportsman should know when he goes afield.

Then finally came the big day—rather, one of two big days because the volume of applicants required two

sessions. The Parker River Refuge is well supplied with shooting areas when waterfowl populations warrant gunning, and one 200-acre tract was set aside for the boys. Members of the Essex County sportsmen's clubs built the blinds of sections of snow fence and various neutral-colored materials. They also staked out blind locations, thus averting confusion on the day of a shoot. Many of the counselors had their own retrievers. In addition, the Colonial Retriever Club furnished three retrievers and handlers for the first hunt and a half dozen for the second. Two dogs owned by refuge personnel also were brought into service. As it developed, ten lads from each group were unable to attend the shoots, because of illness or other complications.

Before the hunts began, a census showed 4,000 geese and 13,000 ducks on the refuge. The blinds were placed on an established flight line between fresh water and salt water, which would, as one counselor put it, provide the boys with better waterfowl shooting than they'd be likely to see again in a lifetime.

Thirty-one trainees tried their luck on the first shoot, and took thirty-three Canada geese and forty-four ducks with no known loss of cripples. The second hunt, a week later—Nov. 6—took place when there were 2,000 geese and 9,600 ducks on the refuge. Thirty-six trainees reported for this one. They harvested thirty-five geese, forty-six ducks, and one lone coot, with a crippling loss of one goose and two ducks.

This amazingly low crippling loss among so many novice hunters was, of course, largely due to their having so many retrievers. Nevertheless, old duck hunters associated with the project reported that they'd seldom seen so many beginners shoot so conservatively. The training the boys had had, and (Turn back to page 44)

(Continued from page 73)

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Imported Briar OLDE LONDON PIPE

for six empty pouches of
EDGEWORTH or HOLIDAY



You'd expect to pay at least \$1.50 for this smart pipe carved from richly grained imported briar, with carbonized bowl and genuine hard-rubber screw-in stem. It's yours free, for only six empty inner pouches from House of Edgeworth's best loved tobaccos. Edgeworth Ready-Rubbed, with its blend of choice, cool-smoking Burleys, or Holiday Mixture, with the famous aroma men relish and women welcome, too.

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the presence of counselors beside them, reduced the out-of-range shooting to a minimum.

"It was a fine experience for the boys," says Francis Brainard, president of the State Council of Sportsmen's Clubs. "And many of the older men who acted as instructors had their eyes opened to some important facts. Too few of us realize that nowadays lack of opportunity to try your luck on a lot of birds brings to the shooting areas individuals who spoil the sport for everyone else. Identification of species is a first necessity but this can be mastered without hunting. However, learning about range and leads are other matters and most beginners have to learn them by trial and error.

"All in all, we feel that the program went off very well. There were some weak spots, some failures, but we hope they'll be corrected this year. From all we can judge, there will be many more applicants than there were last season. That first group came from within fifty miles or so of the refuge, but word got around and we hear of high interest in more distant parts of the state."

As for the boys themselves—well, I talked to 16-year-old Randy Gulp-till, of Beverly, who took part in the program.

"At first, those of us who had had gun-safety training weren't very enthusiastic," he said. "But as we got into the training sessions it became a lot more interesting and now my guess is that every boy who trained and shot last year would like to do it over again.

"I had hunted a little with my father so it wasn't all completely new to me as it was to some. Learning about identification and range were the two things I considered most valuable. Another thing is, it gave me a chance to watch others shoot and learn a lot from their mistakes."

In Massachusetts, applicants for this training in the 1966 season were required to have their applications in Parker River Refuge headquarters by October 10. Announcement of training centers was to be made after that time. The four sessions given last season were scheduled to be repeated, with one added feature—a true-or-false test of 100 statements having to do with waterfowl and hunting regulations. Reference material would be furnished.

At least one other state is considering a similar project. In commenting on the New Jersey situation John Gottschalk, Director of the Bureau of Sport Fisheries and Wildlife, told me, "Yes, we are promoting arrangements similar to those in Massachusetts. Here, too, citizen groups will be expected to assume responsibility for the actual workings of the program. They appear willing to do that."

The Service emphasizes that the two Brigantine freshwater pools on which migrating waterfowl congregate (and near which bird watchers gather) will not be involved in any shooting.

Says Richard Griffith, regional head of the Wildlife Service headquarters in Boston, "In the Service's effort to perpetuate wild waterfowl hunting indefinitely, the national refuge system is a most important management tool. While the refuges cannot begin to accommodate all waterfowl hunters even in years of great abundance, they can, through a program of this type, provide a quality recreational experience at least once for a large number of beginning hunters. I also see such movements as resolving differences now existing between some conservation groups."

All this, in my book, is of high importance. May the program expand and prosper!



1966 YOUNG WATERFOWLER'S TRAINING PROGRAM

The program will be open to any young person who has received his or her graduate certificate from a State-approved hunter safety course in 1966, and who will obtain his or her FIRST license to hunt in Massachusetts. Hunts will be held on Saturdays, during late October and early November. Opportunity and date of hunts will be determined by order of receipt of qualifying papers and choice of individuals, but a drawing will be used when applicants exceed any one hunt's capacity.

Applications and supporting certificates must be received prior to October 10, 1966, and should be mailed to: Refuge Manager, Parker River National Wildlife Refuge, Newburyport, Massachusetts, 01950. A proper application and supporting papers will consist of the following:

1. The Application Card: A postal card self-addressed to the Trainee with his name and address. Write on the back his 1st, 2nd, 3rd and 4th choice of dates to participate in the training hunt on the Parker River Refuge.
2. Copy of the Graduation Certificate of a State-approved hunter safety course, completed in 1966. (This certificate will be promptly returned to the Trainee)
3. Certificate from a qualified instructor* or sportsman's club attesting to the applicant's age, training in waterfowl regulations, hunting equipment and proper hunting conduct or sportsmanship. (* NOTE: a qualified instructor is considered as an adult who has any State's current and valid small game hunting license and valid duck stamp; who will provide six decoys for use by his Trainee during the hunt. The instructor must have his own license and duck stamp in his possession.)
4. A completed trainee examination sheet furnished by the Bureau or the club, answered by the Trainee.
5. A completed instructor examination sheet furnished by the Bureau or the club, answered by the instructor.
6. A certificate from the range captain or club secretary of a club-owned skeet or trap range stating that the applicant has broken at least five out of ten clay pigeons in 1966.

The instructor and his Young Waterfowler should plan to visit the Parker River Refuge on a Sunday one week prior to their reserved hunt, select their blind site within the designated hunting area, and construct their blind. The gate attendant can furnish additional information if needed. Please consider spring high tides when planning your blind. The postal card required in Item 1 above, will be returned to you well ahead to advise you of the date you have drawn for your hunt.